

IN THE CLAIMS:

Please cancel claims 1-5 and add claims 6-25, as follows:

--6. A method of accessing a single resource in an operating system, comprising the steps of:

incrementing a counter included in said operating system by a discrete value, upon generation of a resource, and using a counter value as generation identifying information;

assigning to said resource an identifier composed of address information and the generation identifying information of said resource;

storing said generation identifying information at a leading location of said resource;

extracting generation identifying information from an identifier transferred as an argument of a system call issued by one user application for accessing said resource;

comparing the extracted generation identifying information with the generation identifying information stored in said resource at said leading location; and

enabling access to said resource when coincidence is found between both of said generation identifying information, while disabling access to said resource when discrepancy is found between both of said generation identifying information.

7. An accessing method according to claim 6, wherein said generation identifying information corresponds to a time said resource was generated.

8. An accessing method according to claim 6, wherein said identifier corresponds to a 64-bit identifier containing a 32 most significant bits which indicates the address of said resource and a 32 least significant bits which indicates the generation

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identifying information.

9. An accessing method according to claim 6, further comprising:

when said coincidence is found between both the generation identifying information, determining that said identifier of said resource is valid and enabling access to said resource using the resource address to perform the processing of said resource; and

when said discrepancy is found between both the generation identifying information, determining that said identifier of said resource is invalid and disabling access to said resource.

10. An accessing method according to claim 9, wherein said identifier corresponds to a 64-bit identifier containing a 32 most significant bits which indicates the address of said resource and a 32 least significant bits which indicates the generation identifying information.

11. An accessing method according to claim 10, wherein said generation identifying information contains leading 16 bits representing said count value of said counter and trailing 16 bits representing a process identifier.

12. An accessing method according to claim 9, wherein said counter records the number of times said resource is generated, and is set to an initial value of zero and incremented by one each time said resource is generated.

13. A method for controlling access to a shared resource in an operating system

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controlling access to said shared resource in response to said comparison.

disabling access to said shared resource when the extracted generation identifying information does not match the generation identifying information stored at said designated location of said shared resource.

15. A method according to claim 14, wherein said shared identifier corresponds to a 64-bit identifier containing a 32 most significant bits which indicates the address of said shared resource and a 32 least significant bits which indicates the generation identifying information.

16. A method according to claim 14, wherein said generation identifying information contains leading 16 bits representing a count value of said counter and trailing 16 bits representing a process identifier.

17. A method according to claim 13, further comprising:
when the extracted generation identifying information matches the generation identifying information stored at said designated location of said shared resource, determining that said resource identifier of said shared resource is valid and enabling access to said shared resource using the resource address to perform the processing of said shared resource; and

when the extracted generation identifying information does not match the generation identifying information stored at said designated location of said shared resource, determining that said resource identifier of said shared resource is invalid and disabling access to said shared resource.

18. A method according to claim 17, wherein said resource identifier corresponds to a 64-bit identifier containing a 32 most significant bits which indicates the address of said shared resource and a 32 least significant bits which indicates the generation identifying information.

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19. A method according to claim 18, wherein said generation identifying information contains leading 16 bits representing a count value of said counter and trailing 16 bits representing a process identifier.

20. A method according to claim 13, wherein said counter records the number of times said shared resource is requested, and is set to an initial value of zero and incremented by one each time said shared resource is requested.

21. A method according to claim 19, wherein said counter records the number of times said shared resource is requested, and is set to an initial value of zero and incremented by one each time said shared resource is requested.

22. A method according to claim 6, further executing a given one of a plurality of processes in said operating system using said resource by:

acquiring said resource for use by said given one process after disabling abortion and preemption of said given one process;

clearing said given one process from preempt-disabled state and disabling preemption of said given one process after processing for said resource;

clearing said given one process from the preempt-disabled state and from the abort-disabled state after said resource has been deallocated from use by said given one process;
and

executing a forcive termination request issued for said given one process during a period in which said given one process has been in the abort-disabled state.

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23. A method according to claim 22, further comprising:
providing a queue for use of said resource for registering those processes issued
respective requests;
executing in a multiprocessing environment a leading one of the processes registered
in said queue and issued respective requests for use of said resource; and
driving periodically processing relating to said process after completion of execution
and executing serially the processes registered in said queue.

24. A method according to claim 13, further executing a given one of a plurality
of processes in said operating system using said shared resource by:
acquiring said shared resource for use by said given one process after disabling
abortion and preemption of said given one process;
clearing said given one process from preempt-disabled state and disabling preemption
of said given one process after processing for said shared resource;
clearing said given one process from the preempt-disabled state and from the abort-
disabled state after said shared resource has been deallocated from use by said given one
process; and
executing a forcive termination request issued for said given one process during a
period in which said given one process has been in the abort-disabled state.

25. A method according to claim 24, further comprising:
providing a queue for use of said shared resource for registering those processes
issued respective requests;
executing in a multiprocessing environment a leading one of the processes registered

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